

A Review: Formulation and Evaluation of Harbal Lipstick from the Extract of *Hylocercus Polyrhizus* (Red Dragon Fruits)

Jokar Mayuri* , Dr. Hingane L D*

Dr. Babasaheb Ambedkar Marathwada University Aurangabad .

Aditya pharmacy college Beed, 431122

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ABSTRACTS

The most popular cosmetic product is lipstick. Lipstick may be harmful to users even if it offers numerous social, psychological, and therapeutic benefits. Since most lipsticks have a high lead content, using high lead lipstick over an extended period of time may be harmful to users. According to research, administering different antioxidants may help prevent or lessen different harmful consequences of lead and oxidative stress production. Red dragon fruit, or *Hylocereus polyrhizus*, is commonly accessible in Myanmar and contains betacyanin pigment, an amaranth colorant with strong antioxidant properties. It is an excellent natural lipstick colorant since it can stop the oxidative stress brought on by low levels of lead. The goal of this research, in the capacity of a pharmacist, was to reduce the adverse effects of lipsticks by creating natural lipstick with betacyanin pigment obtained from *H. polyrhizus* and other natural ingredients. Lipstick was created by heating and combining ingredients in a homogenizer running at 12,000 rpm. Subsequently, the following parameters were assessed for quality: pH, melting point, surface irregularities, aging stability, scent stability, and antioxidant activity. As part of the safety examination, microbiological analysis, skin irritation testing, and lead content measurement were performed. Lipstick formulate using *H. polyrhizus* betacyanin pigment are of a satisfactory caliber. Standard ascorbic acid's IC50 and specially made lipstick's were 4.51 and 22.23 µg/ml, in that order. Formulated lipstick showed no obvious colony in quantitative examination for microbiological control, and in qualitative *Pseudomonas aeruginosa*, *E. coli*, and *Staphylococcus aureus* were found in the analysis. not found in 0.5 g of lipstick formulations. Additionally, the lipstick's formulated lead concentration was only 2.9 ppm, which is within permissible and it had negligible skin irritancy. Therefore, lipstick with betacyanin pigment of

Hylocereus polyrhizus can utilizes as cosmeceutical.

Keywords: Harbal lipstick, Lead, *Hylocereus polyrhizus*, , safety, Red dragon fruit
Graphical abstract

I. INTRODUCTION

Ayurvedic or "natural" cosmetics are other names for herbal cosmetics. When humans began utilizing cosmetics, herbal cosmetics were created. These are thus the oldest items that people have ever used. A few Common cosmetics include face packs, lotions, scrubs, hair oils, hair colors, shampoos, conditioners, lipsticks, eyeliners, mascaras, foundations, eye shadow, fragrances, and other scented products. All of these cosmetic products are formulated with a variety of natural components, such as oils, waxes, natural colors, perfumes, etc portions of plants, such as leaves, flowers, etc., by particular formulation techniques. Therefore, herbal cosmetics are referred to as products, which are made with a basis of different cosmetic components that are allowed, and one or more herbal substances to provide defined cosmetic benefits only.

In 2014, after 12 weeks of lipstick exposure in rats, researchers discovered bioaccumulation lead (Pb) in the blood. That made clear that wearing lipstick can significantly alter the amount of lead in a person's blood. rattling. Many nations' studies revealed that the majority of lipsticks had significant lead content. High and prolonged use of lipstick containing high lead levels may be harmful to users . Additionally, artificially colored lipsticks frequently cause irritations like dry lips, dry lips, and wrinkly lips to those who wear lipstick. Over time, the application of The unfavorable impacts of synthetic substances have also given rise to safety concerns. Typically, Human health is at risk from the artificial dyes used to tint lipsticks. Tars made of coal were used to exposure to lipstick. That pointed out the

exposure to lipstick can cause significant disposition of lead in the blood of rats. Research in many countries found that most lipstick contained high lead level and long term use of high lead level lipstick may harm the consumers. Moreover, lipsticks with artificial dyes are often caused irritations such as dry lips, chapped lips and wrinkled lips to the lipstick users. In long term, the use of synthetic ingredients also raised safety concern due to adverse effects. Usually, the synthetic dyes used for color of the lipsticks are dangerous to humans for consumption. Coal tars used to prepare the synthetic dyes can cause drying of the lips, nausea, allergy and dermatitis. Worse, they can be carcinogenic and even fatal.

Significance of the Research

The findings of this study could have a big influence on developing a substitute colorant for synthetic colorants used in cosmetic applications and comprehend the underlying theory of:

- The process by which the structure of beta-lactin varies under various conditions.
- The fading of betalains' color.

Problem Statement

The artificial coloring employed in lipstick composition gives lips the ideal tint. But in exchange, it has a negative impact on people's health because the majority of the It is discovered that synthetic dyes are hazardous or cancerous. This matter brought up the public focus and awareness of the effects of synthetic dye with relation to safety and health. The pigment-betalains in red dragon fruit have enormous Possibility of replacing synthetic colorants with natural colorants yellow to violet hue when making cosmetics. Throughout the years, several Studies on the variables impacting Red Dragon's stability have been conducted. Fruit coloring called betalain. The main elements influencing the stability of the Light, temperature, oxygen content, and pH level are betalains.

One of the reason why natural pigment not widely commercialised in the industry was due to the discoloration of pigment due to exposure of light, pigment stability during storage, and also the storage environment condition. The stability of the betalains still undergo research to obtain optimum solution to protect the pigment from colour degradation and the most recent technology discovered was microencapsulation of sensitive pigment with coating through spray dryer or freeze dryer. More details research is required to find out

the optimum condition and parameters to produce an effective natural colorant. This research is emphasized on the preparation of encapsulated betalains powder with freeze drying and spray drying method. Besides, betalains pigment produced is used to formulate lipsticks as the model to study the colour stability during storage period. The priority of this research was to observe the suitability of betalains pigment to replace synthetic colorant.

II. AIM AND OBJECTIVES:

Aim - To synthesis a lipstick with natural colour pigment betalains which extracted from *Hylocercus polyrhizus* (red dragon fruit) and study its colour stability during storage period

Objectives -

This study's main goal is to create and assess a lipstick that used *H. polyrhizus*'s betacyanin pigment. The study's precise goals were as follows:

- 1) To extract the *H. polyrhizus*'s betacyanin pigment
- 2) To recognize and measure the pigment betacyanin
- 3) To formulate the lipstick using *H. polyrhizus*'s betacyanin pigment.
- 4) To assess the safety and quality of lipstick containing betacyanin pigment.

Plane of work :

- first study the causes of different lips disease.
- study the natural ingredients used on different lip disease.
- Then prepare the different lipstick by using ingredients .
- Then perform different evaluation test.
- Then find the proper or well formulation of lipstick.

III. MATERIAL AND METHOD

Materials :

The herbal lipstick preparation is done with help of pigment extracted from Plants and plant parts. The selection of plant on the basis of the pigment are present and color contained so that are used in Preparation of Lipstick .Plant and plant parts used as shown in Table no 1: Plant part used during formulation such as dragon fruit, citrus fruit and beat root Along with this raw material we require some ingredient that are the shown in Table no :2 Use of Ingredient during the formulation along their application that are Bees Wax used for glossy and Hardness , White Soft Paraffin used glossiness ,Coconut Oil used blending ,Acacia

Gum used surfactant ,Vitamin used for Anti-Oxidant , Vanilla essence used for purpose of Preservation ,Lemon Juice used as Anti- oxidant , Fruit pigment of Beat & Dragon main purpose Coloring Agent are uses during the formulation.

Color :

During the preparation of herbal lipstick color is important parameter . Color can observe after preparation of lipstick it can be seen different color on the basis of pigment of fruit

Melting Point:

Determination of melting point is important as it is an indication of essence. The melting point of prepared lipstick was determined by capillary tube method using digital melting point apparatus (Panda et al, 2018)

Surface anomalies:

This was studied by observing the surface defects such as no formation and no contamination by fungi Surface observation is important for the determining the purity .

Aging stability:

To study this parameter, first the lipstick was stored in 40°C for 1 h. Various parameters such as bleeding and crystallization of skin surface were observed (Panda et al, 2018)

pH parameter:

The determination of pH is the indication of formulation compatibility with skin. The pH of the prepared herbal lipstick was determined by using digital pH meter is important parameter for the decide the acidity and basicity of product by ph. meter

Skin irritation :

The skin irritation test was carried out by using Human as animal model. The study protocol was approved from Institutional Animal Ethical Committee of Jeypore College of Pharmacy. The prepared lipstick was applied over skin (lip). In interval of 10 min, any reactions like itching, inflammation, redness etc, were observed.

Perfume:

The formulation herbal lipstick was stored in standard storage condition of cool temperature. It wastested for its fragrance after 30 days.

METHOD OF PREPATATION OF LIPSTICK:

- 1) Extract the color pigmentation from basellarubra berries
- 2) Waxes were melted in china dish on water bath with decreasing order of their melting point
- 3) Basellarubr berries extraction was mixed with coconut and castor oil and heated.
- 4) Both phases were mixed at same temperature.
- 5) Lemon , ginger powder, vitmine E, vanilla essence were added at 40°C
- 6) Then mixture was poured into lipstick mould in excess amount and mould was kept on ice bath.

IV. CONCLUSION :

Utilizing natural components as a carrier and blending agent, such as vegetable fat, olive oil, and virgin coconut oil yields a clean, well-rounded product. This combination would boost .The acceptance of the alternative natural substances by the customers replacing chemical components like isopropyl in the recipe lanolin and myristate, which can make lips darker. The Additionally, the lipstick's formulation provides outstanding spreadability, stability, covering, and smoothness when kept in a room warmth.supplementary characteristics of antioxidants and The product's antibacterial qualities increased its commercial worth. as a product for cosmoceuticals.

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